

## SPECIAL SPECIFICATION

## ITEM 8108

## System Support Equipment

1.0 Description. This Item shall govern for the furnishing of system support equipment as detailed in this specification and as shown on the plans or as directed by the Engineer.

## 2.0 Materials.

2.1 General requirements all materials furnished, assembled, fabricated or installed under this Item shall be new, corrosion resistant and in strict accordance with the details as shown on the plans and the requirements herein.

2.2 Operational Support Equipment. Operational support equipment shall meet all requirements of Special Specifications describing that piece of equipment. Documentation shall be provided as called for in the corresponding Special Specification. The Contractor shall provide the operational support equipment and quantity of each as shown:

Description	Qty
1. Local control unit	2
2. Video fiber optic transmitter	3
3. Video fiber optic receiver	3
4. Drop/insert muldem 24 slot chassis with service cards	1
5. Drop/insert muldem substrate card	3
6. Drop/insert muldem voice card	3
7. CCTV field equipment less pole (pole cabinet & camera-complete set to include camera, enclosure, zoom lens, sunshade, visors, pan/tilt unit and camera receiver controller)	1
8. Limited distance asynchronous modem (stand alone)	2
9. Surge suppressors 6pr	10
10. CCTV surge suppressor panel complete (video, 115 vac, signal)	2
11. CCTV field equipment power surge suppressor & distribution panel for CCTV pole cabinet	2
12. CCTV central equipment PTZ keyboard control panel	1
13. Traffic management center operations console 20" monitor	1
14. Laptop computer	1
-8 meg ram memory min	
-500 meg hard disk memory	
-TFT color LCD screen	
-14.4k baud external modem	
-installed microsoft Windows NT Workstation software version 3.51 or later	
15. Desktop computer	2
-Pentium 100	
-16 meg ram memory	
-1.0 gig hard disk	
-network server card 100 mbit/second	

- 15" color SVGA monitor
- installed Microsoft Windows NT Workstation software version 3.51 or later
- CD ROM 4x
- 16. Laser printer 1
  - laser jet 4 or equivalent
  - 6ppm
  - legal size or 8-1/2 x 11 paper
  - 600 dpi minimum

2.3 Tools and Test Support Equipment. The equipment listed below shall be furnished and shall meet the requirements set forth in the applicable special specifications included in this project. probes and test leads shall be furnished with each unit. portable equipment shall be furnished with carrying case. battery operated equipment shall be furnished with batteries. equipment that is equipped with rechargeable batteries shall be furnished with a battery charger. A complete set of documentation including operations manuals shall be provided with each unit of test equipment.

Qty

- 1. Fiber optic tool kit for prepping and terminating fiber optic cable that includes: 2
  - 1 deg cleaver
  - red no-NIK
  - miller stripper-or equivalent
  - diamond scribe
  - jacket stripper
  - buffer tube stripper
  - pliers
  - screwdriver set
  - index matching gel
  - canned air
  - alcohol, cotton swabs
  - KIM wipes- or equivalent
  - utility blade
  - electricians scissors
  - tweezers
  - black tape
  - storage box
  - tape measure
  - FC continuity tester and flashlite
  - piano wire cleaner for elastomeric coupler or coupling sleeve
  - cable markers
  - cable ties
  - red, black & green shrink tubing
  - fusion splice sleeves (20 minimum)
- 2. Inspection microscope for fiber optic connector 2
  - 4 adapters rotate up to 90 deg & locked
  - 4x, 10x 20x & 40x eyepieces with 800 power
  - 2d size cells with a 1.2 watt lamp
  - maximum weight is 2.5 lbs
- 3. Singlemode light pack light source & power meter 2
  - singlemode
  - 1300 & 1550 nm operation, low battery indication
  - detector dynamic range +5 to 50 dbm
  - resolution to 0.1db
  - both optical power meter and light source dimensions 8.5"x 8"x3.5" with a weight of 1.7 lbs

4. Mini. Optical time domain reflectometer 1
  - single mode 1550/1300 nm operation
  - fiber scan resolution in GPIB mode:
    - 8km, 16km, 32km, 64km, 128km, 256km, &
    - auto mode 16m, 8m, 4m, 1m, & 0.5 meter
  - single mode module plug-in required with mainframe
  - fiber analysis software
  - mass memory storage on hard disk
  - diskette storage
  - thermal paper digital printer-integral to the otdr
  - front panel controls for:
    - curser a, curser b
    - vertical expansion
    - horizontal expansion
    - display from
    - pulse width selection
    - loss mode
    - wave length
    - test
  - VGA color monitor-integral to the OTDR 640x480 pixels
  - on/off button in front of panel
  - floppy disk drive
  - singlemode plug in capability in front of panel
5. Telecom test set, chesivale electronics UTS2, 3

TTS-3B or equivalent.

  - tone pulse dialing
  - talk monitor switch
  - polarity check
  - last number redial
  - redial 10x21 digit stores up to 10 years
    - without battery
  - built in ringer
  - adjustable loudspeaker
6. Fiber optic fusion splicer 1

general description

  - fully automatic
  - portable
  - self-contained
  - capacity between 1 to 10 fibers, singularly
    - or simultaneously physical
  - dimensions of not greater than 12"x12"x12" (w,d,h)
  - not more than 25lbs
  - automatic compensation for altitude from
    - sealevel to 9000' ASL without manual compensation
  - 3" liquid crystal display for operator prompts
    - and estimated splice characteristics
    - electrical
  - power input
    - 120 vac +/- 10 %, 50/60 hz \*
    - 12 VDC +/- 15 % \*
    - \* without degradation in performance optical
  - capacity, 1-10 fibers, singularly or simultaneously
  - single mode fiber optic cable
  - average splice loss < 0.08 db
  - average splice return loss > 60 db
  - splice time
  - less than 2 min.

All items required to complete a fully functional and operational fiber optic fusion splicer. This includes, but is

not limited to, all durable items and expendable items required for 400 fiber splices.

- 3.0 Training. Training for the system support equipment shall be in accordance with Section 3.0 of the Special Specification, "Testing, Training, Documentation and Warranty".
- 4.0 Documentation. Documentation for system support equipment shall be in accordance with Section 4.0 of the Special Specification, "Testing, Training, Documentation and Warranty".
- 5.0 Warranty. Warranty for system support equipment shall be in accordance with Section 5.0 of the Special Specification, "Testing, Training, Documentation and Warranty".
- 6.0 Testing. Testing for system support equipment shall be in accordance with Section 2.0 of Special Specification, "Testing, Training, Documentation and Warranty".
- 7.0 Measurement. This Item will be measured by "lump sum".
- 8.0 Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement", will be paid for at the unit price bid for "System Support Equipment". This price shall be full compensation for furnishing all equipment described under this Item, all cables and connectors, all documentation, training, warranty and testing, and all labor, materials, incidentals necessary to complete the work.